

PSEG Nuclear LLC

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APR 01 2019

LR-N19-0043

10 CFR 50.73

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Salem Nuclear Generating Station Unit 2
Renewed Facility Operating License No. DPR-75
NRC Docket No. 50-311

SUBJECT: LER 311/2019-001-00
Salem Unit 2 Manual Reactor Trip Due to Circulating Water Intake Frazil
Ice Blockage

This Licensee Event Report, "Salem Unit 2 Manual Reactor Trip Due to Circulating Water Intake Frazil Ice Blockage," is being submitted pursuant to the requirements of the Code of Federal Regulations 10CFR50.73(a)(2)(iv)(A).

Should you have any questions or comments regarding the submittal, please contact Mr. Thomas Cachaza of Regulatory Affairs at 856-339-5038.

There are no regulatory commitments contained in this letter.

Sincerely,

A handwritten signature in black ink, appearing to read "Patrick A. Martino", with a stylized flourish at the end.

Patrick A. Martino
Salem Plant Manager

Enclosure – LER 311/2019-001-00

cc: USNRC Regional Administrator – Region 1
USNRC NRR Project Manager – Salem
USNRC Senior Resident Inspector – Salem
NJ Department of Environmental Protection, Bureau of Nuclear Engineering
Commitment Coordinator, Salem Generating Station
Corporate Commitment Coordinator, PSEG Nuclear, LLC



LICENSEE EVENT REPORT (LER)

(See Page 2 for required number of digits/characters for each block)

(See NUREG-1022, R.3 for instruction and guidance for completing this form
<http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/>)

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA, Privacy and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to Infocollections.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. FACILITY NAME Salem Generating Station — Unit 2	2. DOCKET NUMBER 05000311	3. PAGE 1 OF 3
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4. TITLE Salem Unit 2 Manual Reactor Trip Due to Circulating Water Intake Frazil Ice Blockage
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5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
01	31	2019	2019	001	00	04	01	2019	FACILITY NAME	DOCKET NUMBER
										05000

9. OPERATING MODE	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)			
1	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)
	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)
10. POWER LEVEL 100%	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> 73.77(a)(1)
	<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	<input type="checkbox"/> 73.77(a)(2)(i)
	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> 73.77(a)(2)(ii)
	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> OTHER	Specify in Abstract below or in NRC Form 366A	

12. LICENSEE CONTACT FOR THIS LER	
LICENSEE CONTACT Thomas J. Cachaza, Senior Regulatory Compliance Engineer	TELEPHONE NUMBER (Include Area Code) 856-339-5038

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT									
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
C	KE	—	—	N					

14. SUPPLEMENTAL REPORT EXPECTED	15. EXPECTED SUBMISSION DATE
<input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO
	MONTH DAY YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On January 31, 2019 at 0301, Salem Unit 2 Reactor was manually tripped when four of six circulators were manually tripped on high traveling water screen differential pressures (DP) due to the accumulation of Frazil Ice on the traveling water screens. All systems functioned as expected and Unit 2 was stabilized in MODE 3 at normal operating pressure and temperature

This event was reportable in accordance with 10CFR50.73(a)(2)(iv)(A). Notification of this event was provided via ENS report 53852.

**LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET**

(See NUREG-1022, R.3 for instruction and guidance for completing this form
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1. FACILITY NAME		2. DOCKET		3. LER NUMBER		
				YEAR	SEQUENTIAL NUMBER	REVISION NUMBER
Salem Generating Station — Unit 2		05000311		2019	001	00

NARRATIVE**PLANT AND SYSTEM IDENTIFICATION**

Westinghouse-Pressurized Water Reactor {PWR/4}

Reactor Protection System {JC/-}
Circulating Water System {KE/-}
Auxiliary FeedWater system {BA/-}

IDENTIFICATION OF OCCURRENCE

Event Date: January 31, 2019
Discovery Date: January 31, 2019

CONDITIONS PRIOR TO OCCURRENCE

Salem Unit 2 was in Mode 1, operating at 100 percent power.

DESCRIPTION OF OCCURRENCE

On January 31, 2019 at 0301, Salem Unit 2 Reactor was manually tripped when four of six circulators were manually tripped on high traveling water screen differential pressures (DP). All of the Circulators experienced high DP across their Circulating Water (CW) intake travelling screens due to the accumulation of Frazil Ice. All systems functioned as expected and Unit 2 was stabilized in MODE 3 at normal operating pressure and temperature.

This event was reportable in accordance with 10CFR50.73(a)(2)(iv)(A). Notification of this event was provided via ENS report 53852.

CAUSE OF THE EVENT

The original design of the CW system did not account for the volume of frazil ice drawn in from the Delaware River. The large amount of frazil ice collected and clogged the travelling screens, resulting in high traveling screen DP. This required multiple circulators to be tripped, which required Salem Unit 2 to be manually tripped.

SAFETY CONSEQUENCE AND IMPLICATIONS

No safety consequences are associated with this event. Operators responded appropriately to the removal of the CW pumps from service and the subsequent manual reactor trip in accordance with plant procedures. Plant response to the manual reactor trip was normal. All safety systems operated as required.

SAFETY SYSTEM FUNCTIONAL FAILURE

This condition did not result in a safety system functional failure as defined in NEI 99-02, Regulatory Assessment Performance Indicator Guidelines. This event did not result in a condition that would have prevented the fulfillment of a safety function of a system needed to shut down the reactor and maintain it in a safe shutdown condition, remove residual heat, control the release of radioactive material, or mitigate the consequences of an accident.



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		2019	001	00

NARRATIVE (cont.)

PREVIOUS EVENTS

A review of previous events for the past three years did not identify similar events.

CORRECTIVE ACTIONS

Revise the abnormal operating procedure, SC.OP-AB.ZZ-0001, Adverse Environmental Conditions, to incorporate frazil ice conditions in the Circulating Water Degradation Index.

COMMITMENTS

There are no regulatory commitments contained in this LER.